Appl. No. 10/551,089 In re Di Giacomo et al.

Reply to Office Action of Dec. 8, 2009

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A drive assembly ([[8;]] 52) for driving a rotary

member (10) of a pump (7) of a combustion engine (1); the assembly ([[8,]] 52) comprising:

a movable supporting member (15);

a drive wheel (16) fitted idly to said movable supporting member (15);

torsional elastic means (30) exerting a rotational force on said movable supporting

member (15) so that said drive wheel (16) drivingly contacting said rotary member (10) and a

drive member (5) powered by said combustion engine (1) to drive the rotary member (10)

drivingly connected to said pump (7);

actuating means (81) provided to exert a force in opposition to that exerted by said

clastic means (30) to detach said drive wheel (16) from at least one of said rotary member

(10) and said drive member (5)[[,]];

said torsional elastic means (30) housed within said movable supporting member (15);

wherein said actuating means comprising a reversible electric rotary motor (81) such

that [[a]] the rotational force exerted by said elastic means (30) to push said drive wheel (16)

against said rotary member (10) and said drive member (5) being greater than the travel

resistance of said actuating means (22, 47; 58, 81) when maintained in a disabled rest

condition;

said actuating means (81) further comprising a mechanical drive including a two stage

reversible reduction gear drive (78).

Claims 2 and 3 (cancelled)

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Claim 4 (currently amended): The drive assembly as claimed in Claim 1, wherein said actuating means (81) also comprise a mechanical drive is interposed between an actuator said electric rotary motor ([[47;]] 81) and said movable supporting member (15).

Claim 5 (previously presented): The drive assembly as claimed in Claim 4, wherein said movable supporting member (15) comprises a connecting portion (20) disposed opposite to an end portion (18) supporting said drive wheel (16), and connected to said mechanical drive to move said supporting member (15) along a circular trajectory.

Claim 6 (currently amended): The drive assembly as claimed in Claim 5, wherein said two stage reversible reduction mechanical drive comprises a gear drive (78) is interposed between the electric rotary motor (81) and said movable supporting member (15).

Claim 7 (previously presented): The drive assembly as claimed in Claim 6, wherein said mechanical drive comprises cam actuating means.

Claim 8 (previously presented): The drive assembly as claimed in Claim 7, wherein said cam actuating means (59) are interposed between said two stage reversible reduction gear drive (78) and said connecting portion (20).

Claim 9 (previously presented): The drive assembly as claimed in Claim 8, wherein said connecting portion (20) is a hollow tubular portion having an axis of symmetry (23) parallel to the axis of rotation (19) of said drive wheel (16); and wherein said cam actuating means (59) comprise a first hinge pin (60) engaging said hollow tubular portion in rotary manner about said axis of symmetry (23) and hinged to a fixed frame (53) to rotate about a

hinge axis (66) parallel to and eccentric with respect to the axis of symmetry (23); said actuating means (58, 81) rotating said first hinge pin (60) about said hinge axis (66).

Claim 10 (previously presented): The drive assembly as claimed in Claim 9, wherein said elastic means comprise a torsion spring (30) housed in the tubular said connecting portion (20), and having one end fixed angularly to said first hinge pin (60) and the opposite end fixed angularly to the tubular said connecting portion (20).

Claim 11 (previously presented): The drive assembly as claimed in Claim 10, wherein the tubular said connecting portion (20) defines an annular cavity (29) coaxial with said axis of symmetry (23); said torsion spring (30) being a wire spring housed in said annular chamber (29) and coaxial with said axis of symmetry (23).

Claim 12 (currently amended): [[An]] A drive assembly ([[8;]] 52) for driving a rotary member (10) of a pump (7) of a combustion engine (1); the assembly (8; 52) comprising: a movable supporting member (15);

a drive wheel (16) fitted idly to said movable supporting member (15);

elastic means (30) exerting a force on said movable supporting member (15) so that said drive wheel (16) drivingly contacting said rotary member (10) and a drive member (5) powered by said combustion engine (1) to drive the rotary member (10); and

actuating means (81) provided to exert a force in opposition to that exerted by said elastic means (30) to detach said drive wheel (16) from at least one of said rotary member (10) and said drive member (5);

said actuating means comprising a reversible electric rotary motor (81) such that a force exerted by said elastic means (30) to push said drive wheel (16) against said rotary Appl. No. 10/551,089 In re Di Giacomo et al.

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member (10) and said drive member (5) being greater than the travel resistance of said actuating means (22, 47; 58, 81) when maintained in a disabled rest condition;

said actuating means (81) also comprising a mechanical drive interposed between an actuator ([[47;]] 81) and said movable supporting member (15);

said movable supporting member (15) comprising a connecting portion (20) disposed opposite to an end portion (18) supporting said drive wheel (16) and connected to said mechanical drive to move said supporting member (15) along a circular trajectory;

said mechanical drive comprising a gear drive (78) interposed between the electric rotary motor (81) and said movable supporting member (15), and cam actuating means interposed between said gear drive (78) and said connecting portion (20), and a gear drive (78) interposed between the electric rotary motor (81) and said movable supporting member (15);

said connecting portion (20) being a hollow tubular portion having an axis of symmetry (23) parallel to the axis of rotation (19) of said drive wheel (16);

said cam actuating means (59) comprising a first hinge pin (60) engaging said hollow tubular portion in rotary manner about said axis of symmetry (23) and hinged to a fixed frame (53) to rotate about a hinge axis (66) parallel to and eccentric with respect to the axis of symmetry (23);

said actuating means (58, 81) rotating said first hinge pin (60) about said hinge axis (66);

said elastic means comprising a torsion spring (30) housed in the tubular said connecting portion (20) and having one end fixed angularly to said first hinge pin (60) and the opposite end fixed angularly to the tubular said connecting portion (20);

said first hinge pin (60) being fitted integrally with a radial toothed portion (76) of said gear drive (78). Claim 13 (previously presented): The drive assembly as claimed in Claim 12, wherein

said first hinge pin (60) terminates at one end with a radial appendix (74) having a curved slot

(75) with its center of curvature coincident with said hinge axis (66); said toothed portion

(76) facing inwards of said slot (75) and meshing with a pinion (77) movable inside the slot

(75).

Claim 14 (previously presented): The drive assembly as claimed in Claim 12, wherein

said electric rotary motor (81) is housed in a cavity defined by said frame (53), and has an

output shaft parallel to the hinge axis (66).

Claim 15 (previously presented): The drive assembly as claimed in Claims 9, wherein

said frame (53) is connected integrally to a fixed body (50) by a single through screw (70)

extending coaxially with said hinge axis (66).

Claim 16 (previously presented): The drive assembly as claimed in Claim 15, wherein

said frame (53) has a recess (56) bounded by a cylindrical end surface (57) coaxial with said

axis of symmetry (23); said connecting portion (20) being housed removably in said recess

(56); and said first hinge pin (60) being connected in rotary manner to a second hinge pin

(67) coaxial with the hinge axis (66) and integral with a supporting plate (55) of said frame

(53).

Claims 17-21 (cancelled)

Claim 22 (previously presented): The drive assembly as claimed in Claim 1, wherein

said movable supporting member comprises two contoured portions (15a) of the same shape

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and size.

Claim 23 (previously presented): The drive assembly as claimed in Claim 22, wherein said contoured portions (15a) extend on opposite sides of a central plane of symmetry (P) of the drive wheel (16), which plane is perpendicular to the axis of rotation of said drive wheel.

Claim 24 (previously presented): The drive assembly as claimed in Claim 22, wherein said contoured portions (15a) are made of molded plastic material.

Claim 25 (previously presented): The drive assembly as claimed in Claim 23, wherein said contoured portions contact, and are connected integrally to, each other.

Claim 26 (previously presented): The drive assembly as claimed in Claim 22, wherein the contoured portions define at least one end fork having respective arms (15b); each arm having a respective integral cylindrical projection (15c) forming part of a hinge pin coaxial with a relative axis (A), and to which the drive wheel (16) is mounted to rotate about the relative axis (A).

Claim 27 (new): The drive assembly as claimed in Claim 8, wherein said two stage reversible reduction gear drive (78) comprises a pinion (77), a gear (79) non-rotatably coupled to and coaxial with said pinion (77), and a toothed portion (76) of said cam actuating means (59) meshing with said pinion (77); and wherein said gear (79) is in mesh with a sprocket wheel (80) drivingly coupled to said electric rotary motor (81).